

REMARKS

Claims 1-29 are pending in this application. Claims 10 and 15-29 have been canceled. Claim 1 has been amended and new claims 30-47 have been added. Reconsideration is respectfully requested in light of these amendments and the following remarks.

I. Provisional Rejection of Claims for Obviousness-Type Double Patenting

Claims 1, 3-4, 7, 10-11, and 13-14 have been provisionally rejected on nonstatutory obviousness-type double patenting grounds, as being unpatentable over claims in copending Application No. 11/034327. Applicants are submitting a terminal disclaimer attached hereto for this commonly owned application that should overcome an actual or provisional rejection based on a nonstatutory obviousness-type double patenting grounds.

II. Allowable Subject Matter

The Examiner has concluded that claim 10 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicants have amended claim 1 to incorporate the limitations of claim 10. Thus, Applicants believe that claim 1 is now allowable as are claims 2-9, 11-14 that depend on amended claim 1 and include all of the limitations of amended claim 1.

II. New Independent Claim 30

New claim 30 is similar to the original claim 1 but has been amended to further limit the dentated surface as including “a random pattern of microfaceted angles on the surface, wherein the microfaceted angles diffuse the light emitted from the LEDs.” (this amendment is supported by the description of the diffuser 88 set forth in paragraphs 73 and 74 of the original application).

The lens 11 of Verdes et al. (U.S. Patent No. 6,425,678 B1) does not contain a diffusing lens having a random pattern of microfaceted angles on the surface (see Figures 1-3). The Verdes lens does not serve as a diffuser for the light emitted from the LEDs. Verdes et al. do not teach or suggest that one should use a light diffuser surrounding the LEDs.

In contrast, the present application teaches the advantage of a diffuser. "The diffuser 88 smoothes and tends to uniformize the spherical distribution of output light radiated from the diffuser relative to the input closely focused narrow beam outputs directly from the LEDs. This critical feature permits avoiding the need to provide a very large array of LEDs so that their overlapping patterns of radiated light will closely approximate a uniform light source." (see original patent application, paragraph 136).

Applicants believe that claim 30 is allowable as are claims 31-33 that depend on claim 30. Since each of these dependent claims contain all of the limitations of claim 30, then claims 31-33 should be allowable.

III. New Independent Claim 34

New claim 34 is similar to the original claim 2 but has been amended as follows: (1) the dentated surface was amended to include "a random pattern of microfaceted angles on the surface, wherein the microfaceted angles diffuse the light emitted from the LEDs." (this amendment is supported by the description of the diffuser 88 set forth in paragraphs 73 and 74 of the original application); and (2) the limitation of "a curved optical lens disposed about the vertical axis surrounding the hollow member, wherein the lens converges beams of light emanating from the hollow member in all horizontal directions" (from claim 2) was added as element (d).

The lighting device claimed in claim 34 has both a diffuser lens and a curved optical lens, with the diffuser lens located between the LEDs and the optical lens. Neither Verdes et al. or Heenan, nor any other patent cited, use two lenses. In fact, marine lanterns want maximum power output and thus one skilled in the art of marine lanterns would prefer to have a single lens for the light to pass through and minimize any effect on the power of the light output. Certainly, the advantages of including a diffuser lens in the marine lantern in conjunction with a lens that "converges beams of light emanating from the hollow member in all horizontal directions" would not be apparent and would even be counterintuitive.

To establish a prima facie case of obviousness there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.

The prior art must also teach or suggest all claim limitations. In this case the prior art cited fails to teach or suggest the use of a diffuser or “microfaceted angles” on the surface of a hollow member surrounding the LEDs. Furthermore, there is absolutely no suggestion or hint in the cited art that one should include two concentric optical lenses around the LEDs. In particular, there is no suggestion that one should use a diffuser with an optical lens such as illustrated in Verdes and Heenan.

Applicants believe that claim 34 is allowable as are claims 35-47 that depend on claim 34 and include all of the limitations of claim 34.

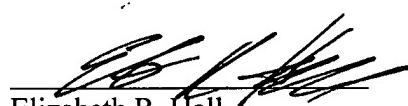
IV. Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that Applicants have responded in a fully satisfactory manner to all matters at issue in the Office Action. If the Examiner has any questions or suggestions concerning the application, or feels that an interview would advance the examination process, the Examiner is requested to call the Applicants' undersigned attorney at the direct dial number printed below.

Respectfully submitted,

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